ZEFOL'D, A.N., prof.; BOL'SHEMYANNIKOV, A.I., dotsent; PETRAKOV, B.D., assistent

Consulting bureau as one of the forms of practical aid from the institute to the public health agencies. Zdrav.Ros.Feder. 4 no.11: 24-27 '60. (MIRA 13:11)

1. Iz Leningradskogo gosudarstvennogo instituta usovershenstvovaniya vrachey imeni S.M.Kirova (dir. - dotsent A.Ye.Kiselev).
(PUBLIC HEALTH)

BOL'SHEMYANNIKOV, A.I., dotsent; PODOL'NAYA, O.G. (Leningrad)

Postgraduate training of physicians in the field of public health organization. Sov. zd-av. 19 no.7:11-13 '60.
(MIRA 13:8)

1. Iz kafedry organizatsii zdravookhraneniya (zav. - prof. Ye.E. Ben) Leningradskogo instituta usovershenstvovaniya vrachey im. S.M. Kirova (dir. -prof. N.I. Blinov).
(PUBLIC HEALTH ADMINISTRATION—STUDY AND TEACHING)

BLINOV, N. I., prof.; BOL'SHEMYANNIKOV, A. I., dotsent

Soviet public health and medical science during the period of the extensive building of communism. [Trudy] GIDUV no.23:29-38 '60. (MIRA 15:7)

(COMMUNISM AND SCIENCE) (PUBLIC HEALTH)
(MEDICINE)

TOLSHEV, I. K.

Dissertation: "Intragroup Incompatibility in Blood Transfusions." Dr Med Sci, Gor'kiy State Medical Inst, Gor'kiy, 1954. Referativnyy Zhurnal--Khimiya, Moscow, No 8, Apr 54.

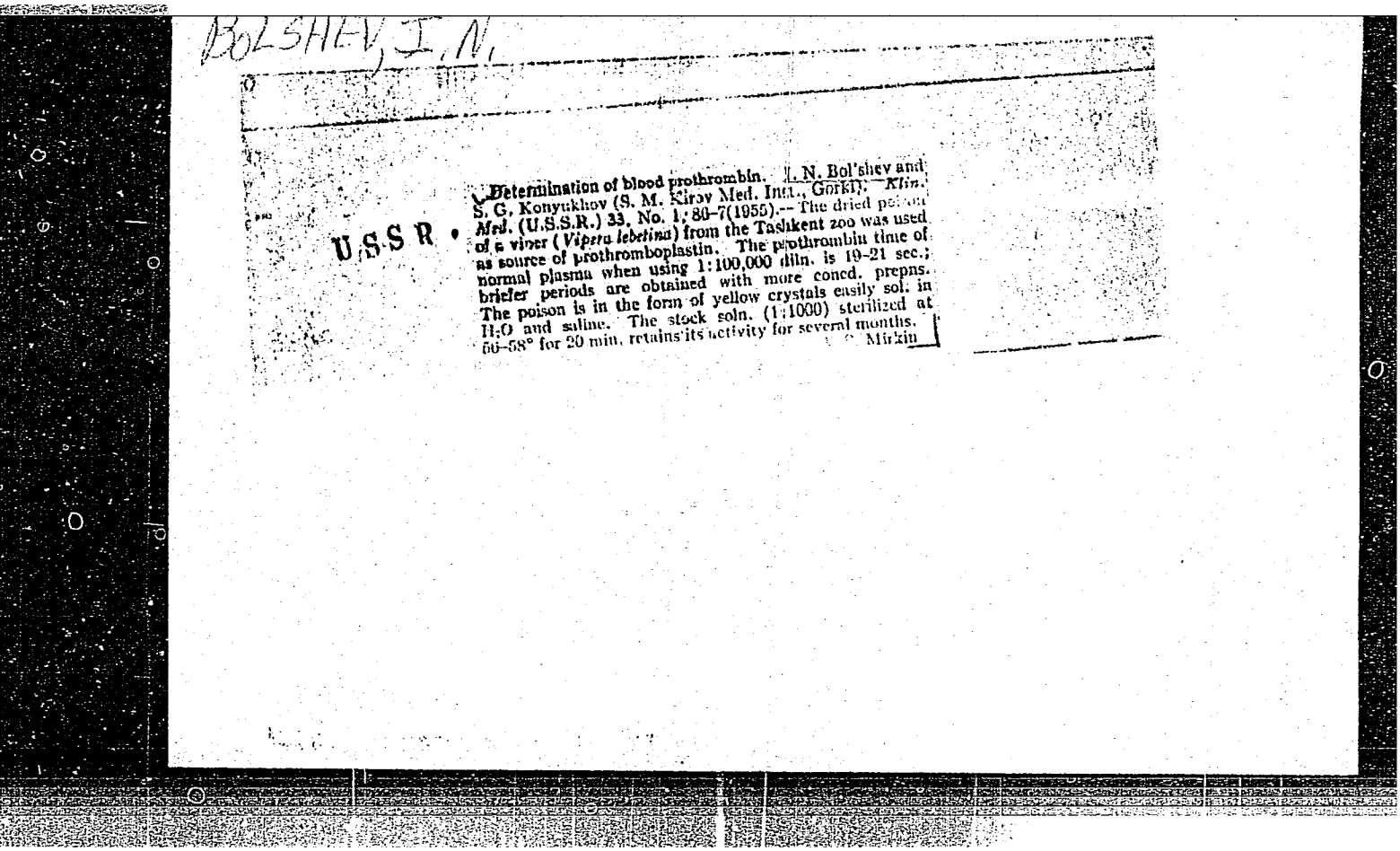
SO: SUM 284, 26 Nov 1954

BOL'SHEV, I.N.; L'VOV, G.S.

Rapid micromethod for the determination of thrombocytes and reticulocytes. Lab.delo no.6:24 N-D '55. (MIRA 12:6)

1. Iz kliniko-diagnosticheskoy laboratorii (zav. - I.N.Bol'shev) Fakul'tetskoy khirurgicheskoy kliniki Gor'kovskogo meditsinskogo instituta imeni S.M.Kirova (nauchnyy rukovoditel' - prof.Ye.L. Berezov).

(ERYTHROCYTES,
reticulocyte, rapid microdeterm.)
(BLOOD PLATELETS,
microdeterm., rapid technic)



BOLSHEV, I. N.

USSR

Determination of blood prothrombin. I. N. Bol'shev and S. G. Konyukhov (S. M. Kirov Med. Inst., Gorkii). *Klin. Med.* (U.S.S.R.) 33, No. 1: 80–7(1955).—The dried poison of a viper (*Vipera lebetina*) from the Tashkent zoo was used as source of prothromboplastin. The prothrombin time of normal plasma when using 1:100,000 dilu. is 19–21 sec.; briefer periods are obtained with more concd. prepns. The poison is in the form of yellow crystals easily sol. in H_2O and saline. The stock soln. (1:1000) sterilized at 56–58° for 20 min. retains its activity for several months. — Mirkin

BOL'SHEV, I.N.

BOL'SHEV, I.N.

Prevention and treatment of malignant jaundice of the newborn without blood transfusion. Akush. i gin. 32 no.5:37-40 S-O '56. (MIRA 10:11)

1. Iz laboratorii pri fakul'tetskoy khirurgicheskoy kliniki Gor'kovskogo meditsinskogo instituta imeni S.M.Kirova i Gor'kovskoy stantsii perelivaniya krovi (nauchnyy rukovoditel' - zasluzhennyy deyatel' nauki prof. Ye.L.Berezov)

(ACUTE YELLOW ATROPHY, in inf. and child in newborn, prev. & ther.)
(INFANT, NEWBORN, dis. acute yellow atrophy, prev. & ther.)

BOL'SHEV, I.N.

Tenth year of the Gorkiy Society of Medical Technologists. Lab.delo 5 no.5:58 S-O '59. (MIRA 12:12)
(GORKIY--MEDICAL TECHNOLOGISTS)

VOGRALIK, V.G., prof., red.; BELOUSOV, S.M., red.; BOL'SHEV, I.N., red.; KLIMOVA, N.Ya., red.; KOROLEV, B.A., red.; YASHANIN, Yu.V., red.

[Problems in the pathology and treatment of blood system diseases] Voprosy patologii i terapii sistemy krovi. Gor'kii, 1961. 197 p. (MIRA 14:12)

1. Gospital'naya terapevticheskaya klinika Gor'kovskogo meditsinskogo instituta im. S.M.Kirova i Gematologicheskoy kliniki pri Oblastnoy stantsii perelivaniya krovi (for Vogralik). 2. Gor'kovskaya oblastnaya stantsiya perelivaniya krovi (for Bol'shev, Klimova, Yashanin). 3. Klinika gospital'noy khirurgii Gor'kovskogo meditsinskogo instituta im. S.M.Kirova (for Korolev).
(BLOOD--DISEASES)

BOL'SHEV, I.N.

Capillary micromethod for determining bilirubin in the blood. Lab. delo [7] no.4:58 Ap '61. (MIRA 14:3)

1. Laboratoriya Gor'kovskoy oblastnoy stantsii perelivaniya krovi (dir. N.Ya.Klimova).
(BILIRUBIN) (BLOOD--ANALYSIS AND CHEMISTRY)

[redacted], L. N.

Nomogram combining the parameters of normal distribution with the probabilities in the classification into three groups. "Inzhinernyy Sbornik" by Academy of Science of the USSR, Department of Technical Sciences, Institute of Mechanics. 1955.

BOL'SHEV, L.N. (Moscow)

A nomogram used to connect normal distribution parameters and probabilities in the classification by three groups. Inzh.sbor. no.21:212-214 '55. (MLRA 8:11)

(Nomography (Mathematics))

BOL'SHEV, L. N.

"On the Problem of Verification of Certain Intricate Statistical Hypotheses." Moscow Order of Lenin State U imeni, M. V. Lomonosov, Moscow, 1955. (Dissertation for the degree of Candidate of Mathematical Sciences.)

SO: M-972, 20 Feb 56

16(1),16(2)

AUTHOR: Bol'shev,L.N. SOV/52-4-2-2/13

TITLE: On the Transformations of Random Variables

PERIODICAL: Teoriya veroyatnostey i yeye primeneniya, 1959, Vol 4, Nr 2, pp 136-149 (USSR)

ABSTRACT: The paper is devoted to the investigation of the connection between the asymptotic normal transformations and the asymptotic developments of Edgeworth, Cornish and Fisher. In §1 the author deduces four asymptotic formulas, among them the reversion of the Edgeworth-series. As an application of these formulas in §2 the author gives the percentage points of the χ^2-distribution with $n \geq 80$ degrees of freedom. In §3 the author proves the principal theorem in which for a series of cases a clear connection between the Cornish-Fisher-development and the asymptotically normal transformations is established. The theorem permits to elaborate a method for the construction of the asymptotically normal transformations. By several examples the transformations of Wilson-Hilferty and Bartlett as well as the construction of normal random numbers are considered.
There are 2 tables, and 16 references, 2 of which are Soviet, 8 English, 2 American, 1 German, 2 Swedish, and 1 French.

SUBMITTED: January 3, 1959

Card 1/1

16020
C/052/60/005/004/005/007
C 111/ C 333

16.6100 16.6200

AUTHOR: Bol'shev, L. N.

TITLE: On Estimates of Probabilities

PERIODICAL: Teoriya veroyatnostey i yeye primeneniye, 1960, Vol. 5, No. 4, pp. 453-457

TEXT: The author considers a sequence of independent trials; let the probability of a positive event be always p. Let the experiment be modeled by displacement of a particle over the integer points of a plane. Assume that the displacement is continued as far as the particle reaches a given set G of the plane. Such an experimental procedure is denoted as sequential type plan.

Definition: A sequential type plan is called simple, if the boundary satisfies the conditions: 1.) For every $0 < p < 1$ G is reached with the probability 1 in finitely many steps. 2.) If for every p, $0 < p < 1$, the end point (x,y) $(x \geq 1, y \geq 1)$ is reached with positive probability, then the rectangle $0 \leq X \leq x-1$, $0 \leq Y \leq y-1$ does not contain a single end point.

A special case of a simple plan is that one of Bernoulli, where G

Card 1/3

On Estimates of Probabilities

consists of all the integer points (x,y) for which x + y = n; x, y $\geq$ 0 (see Ref.5)).

The author shows that, in the case of a simple sequential type plan, the value of the internal estimate for p in every end point depends only on the coordinates of this point and on the position of the two adjacent end points. From this the author concludes that in these cases the internal estimates for p can be constructed with the aid of the tables (Ref.2,6,9), for the confidential limits for p are quantiles of the B-distribution. As an example the author considers a simple sequential type plan for which G consists of the straight line x = m ($m \geq 1$). An approximation formula for confidential limits is given.

There are 9 references: 3 Soviet, 4 English and 2 American.

Card 2/3

86020
S/052/60/005/004/005/007
C 111/ C 333

On Estimates of Probabilities

[Abstracter's note: (Ref.2) concerns I.V. Dunin-Barkowskiy and N.V. Smirnov, Theory of Probability and Mathematical Statistics in Technique, 1955. (Ref.5) is a paper of Girshik, Mosteller and Savage in Ann. Math.Statist., 1946, Vo.17, pp.13-23. (Ref.6) concerns A.Hald, Statistical tables and formulas, 1952, Wiley, N.Y. (Ref.9) is a paper of C.M.Thompson in Biometrika, 1941, Vol.32, No.3, pp.151-181.

SUBMITTED: December 29, 1959

Card 3/3

3477
S/052/61/006/004/004/005
16.6200 C111/C222

AUTHORS: Bol'shev, L.N., Gladkov, B.V., Shcheglova, M.V.

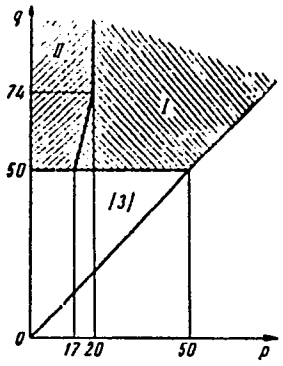
TITLE: Tables for calculation of B and Z-distribution functions

PERIODICAL: Teoriya veroyatnostey i yeye primeneniye, v. 6, no. 4, 1961, 446 - 455

TEXT: Tables I and II for the determination of the B and Z - distribution functions $I_x(p,q)$ and $F_{2p,2q}(z)$ are given on four pages. The tables complement the tables given by K. Pearson (Ref. 3 : Tables of the Incomplete Beta-function, Biometric Laboratory, London, 1934). The figure

Card 1/4

Tables for calculation of B ...



shows the regions of the (p,q) - plane in which tables I,II and those of (Ref. 3), respectively, are to be used. Table I gives the values of $10^5 \varphi_1(u,v)$ and $10^5 \varphi_2(u,v)$, where φ_1 and φ_2 are the correction terms

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S/052/61/006/004/004/005
C111/C222

Tables for calculation of B ...

in the formula

$$I_x(p,q) = F_{2p,2q}(z) = \phi(u) + \varphi_1(u,v) + w^2 \varphi_2(u,v) + O(\sqrt{v^8 + w^8}) \qquad (1)$$

of J. Wishart, An approximate formula for the cumulative z-distribution, Ann. Math. Statistics, 28, 2 (1957), 504-510). Table II gives the values of $\gamma(y,p)$ in the formula

$$I_x(p,q) = F_{2p,2q}(z) = I(y,p) + \frac{1}{6(2q+p-1)^2}\gamma(y,p) + O(q^{-4}) \qquad (6)$$

of L.N. Bol'shev (ref. 10 : Ob otsenkakh veroyatnostey (On estimates of probabilities), Teoriya veroyat. i yeye primen., V, 4 (1960), 453-457).

The error resulting from using the tables is not larger than $5 \cdot 10^{-5}$. The possibility of using the tables to calculate the binomial distribution is mentioned.

Mentioned : A.N. Kolmogorov, Academician.

Card 3/4

Tables for calculation of B ... S/052/61/006/004/004/005
C111/C222

There are 2 tables, 1 figure, 5 Soviet-bloc and 6 non-Soviet-bloc references. The references to English language publications read as follows : K. Pearson, Tables of the Incomplete Beta-function, Biometric Laboratory, London, 1934 ; Tables of the Binomial Probability Distribution, National Bureau of Standards, Applied Mathematics Series, 6, Washington, 1950 ; H.G. Romig, 50-100 Binomial Tables, New York, John Wiley & Sons, Inc., London, Chapman & Hall, Limited, 1953 ; J. Wishart, An approximate formula for the cumulative z-distribution, Ann. Math. Statistics, 28, 2 (1957), 504-510.

SUBMITTED: June 28, 1960

Card 4/4

BOL'SHEV, L. N.

Transactions of the Sixth Conference (Cont.) SOV/6371

MATHEMATICAL STATISTICS

Transactions of the 6th Conf. on Probability Theory and Mathematical Statistics and of the Symposium on Distributions in Infinite-Dimensional Spaces held in Vil'nyus, 5-10 Sep '60. Vil'nyus Gospolitizdat Lit SSR, 1962. 493 p. 2500 copies printed

SMIRNOV, Nikolay Vasil'yevich; BOL'SHEV, Login Nikolayevich; MEDER, V.M., red. izd-va; SIMKINA, G.S., tekhn. red.

[Tables for calculating the function of two-dimensional normal distribution]Tablitsy dlia vychisleniia funktsii dvumernogo normal'nogo raspredeleniia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 203 p. (MIRA 15:9)

(Mathematical statistics)

ALEKSANDROV, P.S., red.; BOL'SHEV, L.N., red.; VLADIMIROV, V.S., red.; KUDRYAVTSEV, L.D., red.; LEONT'YEV, A.F., red.; NIKOL'SKIY, S.N., red.; POSTNIKOV, M.M., red.; SOLOMENTSEV, Ye.D., red.; SHAFAREVICH, I.R., red.; GRIBOVA, M.P., tekhn. red.

[English-Russian mathematical dictionary]Anglo-russkii slovar' matematicheskikh terminov. Red. kollegiia; P.S.Aleksandrov (predsedatel') i dr. Moskva, Izd-vo inostr. lit-ry, 1962. 369 p. (MIRA 15:11)

1. Akademiya nauk SSSR. Matematicheskiy institut.
(English language--Dictionaries--Russian)
(Mathematics--Dictionaries)

BOL'SHEV, L.N. (Moscow)

Comparison of parameters of Poisson distributions. Teor.veroiat.i ee prim. 7 no.1:119-120 '62. (MIRA 15:3)
(Distribution(Probability theory))

EWT(d)/FCC(w)/BDS--AFFTC--IJP(C)
L 10794-63
ACCESSION NR: AP3001098

S/0208/63/003/003/0419/0430

AUTHOR: Bol'shev, L. N.; Kuznetsov, P. I.

53
52

TITLE: On evaluating the integral p(x,y)

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 3, no. 3, 1963, 419-430

TOPIC TAGS: approximation formula, p(x y) tabulation, Bessel function, probability theory

ABSTRACT: Using limit theorems for infinitely divisible distribution laws and in particular for noncentral χ^2 distributions, properties are established on the basis of which a series of new, sufficiently simple approximations of

$$p(x, y) = 2 \int_0^x ue^{-(u^2 + y^2)} I_0(2uy)du, \qquad (1)$$

are derived (where $I_0(2uy)$ is a Bessel function of the zero order which occurs

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ACCESSION NR: AP3001098

in many problems of mathematical physics, probability theory, and mathematical statistics), and a method of composing compact tables of $p(x,y)$ values for all values of x and y is outlined. Necessary information concerning cylindrical functions is presented, and formulas establishing the relations between cylindrical functions and the noncentral χ^2 distribution function are derived and used to represent (1) as the product of an exponential function and the sum of two cylindrical functions. On the basis of this relation approximate formulas for evaluating (1) are derived, and means for making them more precise are analyzed. A detailed analysis of the tabulation of (1) according to the scheme proposed by A. N. Kolmogorov is presented. Orig. art. has: 39 formulas.

ASSOCIATION: none

SUBMITTED: 05Jul62 DATE ACQ: 10Jun63 ENCL: 00

SUB CODE: MM NO REF SOV: 010 OTHER: 010

Card 2/2

BOL'SHEV, L.N.

"Introduction to mathematical statistics" [in English] by P.G. Hoel. Reviewed by L.N.Bol'shev. Zhur. vych. mat. i mat. fiz. 3 no.3:607-608 My-Je '63. (MIRA 16:5)
(Mathematical statistics) (Hoel, P.G.)

L 13395-63 BDS/EWT(d)/FCC(w) AFFTC IJP(C)

ACCESSION NR: AP3001456 S/0052/63/008/002/0129/0155

AUTHOR: Bol'shev, L. N. (Moscow) 53

TITLE: Asymptotic Pearson transformations 16 52

SOURCE: Teoriya veroyatnostey i yeye primeneniya, v. 8, no. 2, 1963, 129-155

TOPIC TAGS: Cornish-Fisher expansion, Edgeworth expansion, distribution approximation, binomial approximation, non-central distribution approximation, chi-square, Kolmogorov-Smirnov distribution approximation

ABSTRACT: The paper deals with a refinement of some limit theorems 16 and asymptotic formulas similar to the Edgeworth and Cornish-Fisher expansion. In the first part of the paper various aspects of approximations for distributions close to those in Pearson's family are discussed. The theory of asymptotic Pearsonts transformations of random variables generalizes the theory of asymptotically normal transformation. These results are used in part two for studying asymptotic properties of the B-distribution that enable a new approximation for the binomial distribution to be constructed more exactly than the normal or the Poisson approximation. The third part of the paper deals

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ACCESSION NR: AP3001456

with examples of asymptotically Pearson's transformations. Here, in particular, approximation problems on non-central distributions chi-square, F and t, as well as the Kolmogorov-Smirnov test distribution are discussed. Some numerical examples of the refined approximations are given, and the orders of magnitude of the error terms are computed, but no concrete usable error terms are ever derived. Orig. art. has: 106 formulas and 2 tables.

ASSOCIATION: Matematicheskiy institut im. V. A. Steklov AN SSSR (Mathematical Institute, Academy of Sciences SSSR)

SUBMITTED: 11Sep61	DATE ACQ: 17Jun63	ENCL: 00
SUB CODE: 00	NO REF SOV: 015	OTHER: 016

Card 2/2

URBAKH, Viktor Yul'yevich; LIVSHITS, N.N., doktor biol. nauk, otv. red.; BOL'SHEV, L.N., kand. fiz.-mat. nauk, red.

[Biometric methods; statistical processing of experimental data in biology, agriculture and medicine] Biometricheskie metody; statisticheskaia obrabotka opytnykh dannykh v biologii, sel'skom khoziaistve i meditsine. Moskva, Nauka, 1964. 415 p. (MIRA 18:1)

BOL'SHEV, L.N. (Moscow)

M.Kandyrov's random numbers in J.Janko's statistical tables. Teor. veroiat. i ee prim. 9 no.1:152-154 '64. (MIRA 17:4)

BARK, L.S.; BOL'SHEV, L.N.; KUZNETSOV, P.I.; CHERENKOV, A.P.; DITKIN, V.A., prof., otv. red.; ORLOVA, L.A., red.

[Rayleigh-Rice tables of distribution] Tablitsy raspredeleniia Relaia-Raisa. Moskva, Vychislitel'nyi tsentr, 1964. 245 p. (MIRA 18:1)

BOL'SHEV, L.N. (Moscow)

Distributions contiguous to the hypergeometric one. Teor. veroiat. i ee prim. 9 no.4:687-692 '64. (MIRA 17:12)

BOL'SHEV, L.N.

Construction of fiducial limits. Teor. veroiat. i ee prim. 10 no.1: 187-192 '65. (MIRA 18:3)

1. Matematicheskiy institut imeni Steklova AN SSSR, Moskva.

BOL'SHEV, Login Nikolayevich; SMIRNOV, Nikolay Vasil'yevich

[Tables of mathematical statistics] Tablitsy matematicheskoi statistiki. Moskva, Nauka, 1965. 464 p. (MIRA 18:7)

BOL'SHEV, L.N. (Moscow)

Charaterization of the Poisson distribution and its statistical applications. Teor. veroiat. i ee prim. 10 no.3:488-499 '65.
(MIRA 18:9)

1. Matematicheskiy institut imeni Steklova AN SSSR.

L 44443-66 EWT(d)/T IJP(c)

ACC NR: AP6021953 SOURCE CODE: UR/0052/66/011/001/0094/0107

AUTHORS: Bol'shev, L. N. (Moscow); Loginov, E. A. (Moscow) 31 B

ORG: none

TITLE: Interval estimates in the presence of nusiance parameters

SOURCE: Teoriya veroyatnostey i yeye primeneniya, v. 11, no. 1, 1966, 94-107

TOPIC TAGS: normal distribution, parameter, Euclidean space, vector, probability, reliability, distribution function, degree of freedom

ABSTRACT: This paper is an extension of the results of an earlier work by L. N. Bol'shev (O postroyenii doveritel'nykh predelov, Teoriya veroyat. i yeye primen., X, 1 (1965), 187--192) to the case when the confidence limits for an unknown parameter are constructed in the presence of other unknown nuisance parameters. The main problem requires the construction of an interval estimate for the value of some given function $u(c)$, which corresponds to the true value of c. It is assumed that $\eta = (\eta_1, \ldots, \eta_n)$ is a random value with a probability distribution assigned in an n-dimensional Euclidean space $\mathfrak{X}^n$; and that it is a function of m parameters $c_1, \ldots, c_m$. The following theorem is proved: if for any η with a probability of unity $f[v(\eta, a); a]$ and $F[v(\eta, a); a]$ with respect to the variable a are nonincreasing (nondecreasing) functions, which are extended when $a \in U^* \setminus U$ arbitrarily, but with preservation of

Card 1/2

L 44443-66

ACC NR: AP6021953

monotonicity, and if the lower α_1 and upper α_2 confidence limits for the true value of $a = u(c)$ are defined as the upper and, correspondingly, lower bounds of such values of α, which belong to U*, for which

$$f[v(\eta, a); a] \geqslant P \text{ and, correspondingly, } F[v(\eta, a); a] \leqslant 1 - P,$$

$$[F[v(\eta, a); a] \leqslant 1 - P \text{ and, correspondingly, } f[v(\eta, a); a] \geqslant P],$$

then each of these confidence limits has a confidence coefficient of not less than $P(0 < P < 1)$. Confidence limits are calculated for the probability of reliable operation of a complex of instruments connected in series. Interval estimates are given for parameters of a normal distribution. The Berens-Fisher problem is solved. Orig. art. has: 18 formulas.

SUB CODE: 12/ SUBM DATE: 14Oct65/ ORIG REF: 004/ OTH REF: 004

Card 2/2

BOL'SHEV, L.P. (Moskva)

A nomogram connecting the parameters of a normal distribution with the probabilities for classification into three groups [with summary in English]. Teor.veroiat.i ee prim. 2 no.1:124-126 '57. (MLRA 10:7)

(Nomography (Mathematics)) (Probabilities)

Work of the Gorkiy Society of Laboratory Specialists. Lab.delo 3 no.3:58 My-Je '57. (MIRA 10:9)
(GORKIY PROVINCE--MEDICAL LABORATORIES)

83552

1,2300 also 2508

S/135/60/000/009/012/015
A006/A002

AUTHORS: Shternin, L. A., and Bol'shev, S. A., Engineers

TITLE: Friction Welding of Parts at the "Elektroapparat" Plant

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 9, pp. 37-38

TEXT: The MCT-2 and the MCT-31 (MST-2 and MST-31) friction welding machines were brougnt into use at the Leningrad "Elektroapparat" Plant. Their technical data are given in Table 1. The introduction of the machines was performed with the assistance of VNIIESO where they had been designed and manufactured. The machines are intended for small-scale production. Ordinary three-jawed holding devices of 165 and 250 mm respectively are used. The reduction forces in welding are transmitted to supports limiting the length of the parts to be welded to 380 mm on the MST-2 and to 1,000 mm on the MST-31 machine. The welding cycle is automated. The parts to be welded are, as a rule, connections of a rod with a plate. Flat parts are mounted on a device which is fixed to one of the holders, thus reducing the operational time. Welding of levers, rollers, shafts, pins, insertion pieces and strips can now be performed by friction. Raised labor efficiency, reduced consumption of metal, electrodes

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83552
S/135/60/000/009/012/015
A006/A002

Friction Welding of Parts at the "Elektroapparat" Plant

and electric power, and improved work conditions prove the efficiency of the new method. Welding conditions are given in Table 2. There are 3 figures and 2 tables.

ASSOCIATION: VNIIESO-Shtermin, L. A., "Elektroapparat" Plant-Bol'shev, S. A.

Card 2/2

06444
SOV/107-59-5-39/51

AUTHOR: Bol'shev, Yu. (Moscow)

TITLE: Determining the Parameters of a Galvanometer

PERIODICAL: Radio, 1959, Nr 5, p 50 (USSR)

ABSTRACT: The author suggests a sufficiently accurate method for determining the internal resistance of R_o and the current I_o of a galvanometer without using additional measuring instruments. Only a dc power source and two constant resistors are required. R_o is calculated using the following formula

$$R_o = \frac{R_2 - kR_1}{k - 1}$$

where R_1 and R_2 are the magnitudes of the constant

Card 1/2

Determining the Parameters of a Galvanometer

resistors; k is n_1/n_2; n_1 and n_2 are the readings of the instrument with resistors R_1 and R_2 and may be used in any unity. Analoguously the current I_o is calculated

$$I_o = \frac{E}{R_1 + R_2} \cdot \frac{n_o}{n_1}$$

where E is the voltage of the power source, and n_o the highest reading on the galvanometer dial.

Card 2/2

BOL'SHEV, Yevgeniy Nikolayevich; STAROVOYTOV, I.F., red. izd-va; PUL'KINA, Ye.A., tekhn. red.

[Assembly of completely precast apartment houses directly from wehicles] Montazh polnosbornykh zhilykh zdanii s transportnykh sredstv. Leningrad, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1961. 103 p. (MIRA 15:1)
(Building) (Apartment houses)

BOL'SHEV, Ye. N., Cand Tech Sci, "New method of organizing the assembly of prefabricated residential buildings from transport~~ation~~ facilities, by ~~the house buil-~~ housing construction ~~ding~~ combines." Leningrad, 1961. (Academy of ~~Building~~ Construction and Architecture USSR. Leningrad Affiliate). (KL-DV, 11-61, 218).

BOL'SHEVA, I.

Put an end to lagging in fire extinction. Pozh.delo 6 no.7: 26-27 Jl '60. (MIRA 13:7)

1. Nachal'nik proyektno-konstruktorskogo otdela Proyektno-montazhnoy kontory protivopozharnoy avtomatiki.
(Fire extinction) (Automatic control)

L 10858-66 EWT(1)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/GG

ACC NR: AP5028712 SOURCE CODE: UR/0363/65/001/011/1858/1863

AUTHOR: Mil'vidskiy, M. G.; Berkova, A. V.; Bol'sheva, Yu. N.

ORG: Giredmet

TITLE: Method of developing inhomogeneities in silicon single crystals

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 11, 1965, 1858-1863

TOPIC TAGS: crystal impurity, silicon single crystal, etched crystal, phosphorus, arsenic, antimony, boron, aluminum

ABSTRACT: The possibility of developing inhomogeneities in silicon single crystals was studied by selective anodic and chemical etching and by the electrodeposition of copper. P, As, Sb, B, and Al were used as dopants. The optimum etching conditions were selected. The results are compared with data obtained from single-probe resistivity measurements. It is shown that anodic etching and copper electrodeposition are best suited for developing inhomogeneities in single crystals with resistivities above 1 ohm cm, and chemical etching is most appropriate in highly doped single crystals. In anodic etching and copper electrodeposition, areas rich in the impurity are most extensively etched. In chemical etching, the result depends on the type of conduction of the sample: in p-type crystals, areas rich in the impurity are etched

Card 1/2 UDC: 546.28:548.55

L 10858-66

ACC NR: AP5028712

most, whereas in n-type crystals, areas depleted of impurities are attacked. By choosing the most suitable method of etching, one can study the distribution of impurities in p- and n-type single crystals over a wide range of resistivities, from hundreds of ohm cm to 0.001 ohm cm. Orig. art. has: 6 figures, 1 table.

SUB CODE: 20,11/ SUBM DATE: 24Apr65/ ORIG REF: 006/ OTH REF: 009

Card 2/2

Bolshikh, A.

AUTHOR: Bol'shikh, A. 107-8-48/62

TITLE: Electro-Tensometric Dynamometer (Elektrotenzometricheskiy dinamometr).

PERIODICAL: Radio, 1957, #8, pp 47-50 (USSR)

ABSTRACT: Wire resistance tensometers have qualities superior to other types of dynamometers. The most important of these qualities is the remote reading of indications and their automatic addition, if furnished by a dynamometer group.

The electro-tensometric dynamometer has been designed for checking high-power test machines, the ultimate loads of which are 500, 1,000, 1,800, and 2,700 t.

It consists of elastic elements formed by steel rings receiving the load stresses and a recorder.

The compression of a given ring due to the maximum load is 0.2 mm. Four elastic elements allow measuring within the complete range of the above loads.

Card 1/5 One of the elastic elements has been designed for a maximum

TITLE: Electro-Tensometric Dynamometer (Elektrotenzometricheskiy dinamometr).

107-8-48/62

load of 500 t and the three others for 1,000 t each. The weight of the 500 t elastic element does not exceed 12 kg.

The 500 t and the 1,000 t elastic elements differ only in their cross section as shown by Figure 1.

The described dynamometer contains wire feelers made of small, flat spirals of constantan wire of 30μ diameter enclosed in a thin film of polymerized "БФ-2" glue (Figure 2).

Eight feelers are glued to the inner and eight to the outer cylindric surface of the elastic ring. They are connected and form a Wheatstone bridge, four feelers being placed in each arm of the same.

Each feeler has a resistance of 100 ohms. The feelers of opposite bridge arms are glued in such a manner that they respond to the deformation of the same sign.

The measuring bridges, attached to elastic elements are connected with the recorder by means of shielded, four-strand cables. The opposite cable strands are connected in pairs to the bridge diagonals of the feelers.

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TITLE: Electro-Tensometric Dynamometer (Elektrotenzometricheskiy dinamometr).

107-8-48/62

The recorder consists of an auto-oscillator feeding the measuring bridges, assembled with one "6П1П" tube and tuned to 575 cps, a booster, a phase-sensitive detector assembled with Germanium diodes of "Д7-Д1" type and a feed-block. The detector diodes must have identical characteristics. The separate oscillator has been designed to obtain higher dynamometer accuracy.

If the load increase of the elastic element is linear, the voltage will also increase linearly because of unbalancing. The non-linearity will be of 0.01 ± 0.005 %.

In compensating measuring bridges, the voltage of the transformer secondary coil on both sides of the zero, has opposite phases.
The two-stage amplifier, having a transformer input and being assembled with two "6Ж3П" tubes, meets all requirements.

The instrument works on 220 v a.c. A power transformer with a ferro-resonance stabilizer used in connection with the rectifier, form a separate block fixed on supports to the front panel of the recorder.

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TITLE: Electro-Tensometric Dynamometer (Elektrotenzometricheskiy dinamometr).

107-8-48/62

Selenium disks, having a diameter of 45 mm, are used in the heater rectifier of the amplifier tubes. Each bridge-arm consists of 40 disks and is shunted by two disks. The anode voltage rectifier consists of selenium disks of 25 mm diameter. Forty disks are placed in each bridge-arm.

In addition to the ferro-resonance stabilizer block, series of connected gas stabilizers of types "СГ3С" and "СГ4С" are utilized. A voltage of 100 v is transmitted to the screen grids of the amplifier tubes and a voltage of 250 v is applied to the amplifier and oscillator anode circuits.

A magneto-electric instrument of "M-49" type, with zero at the scale-center, is used as indicator.

The operating supervisor has been V.A. Stolyarov, Candidate of Technical Sciences. The recorder adapted to the dynamometer was designed by Engineer A.S. Bol'shikh, Engineer L. Etkin, participated in designing the elastic elements.
This article contains 6 figures.

Card 4/5

TITLE: Electro-Tensometric Dynamometer (Elektrotenzometricheskiy dinamometr). 107-8-48/62

INSTITUTION: Not indicated

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress

Card 5/5

1. BOL'SHIKH, A. S., LAPIN, A. A., YETKIN, L. G.

2. SSSR (600)

4. Metals-Fatigue

7. Resonance type of machine for fatigue testing. Vest. mash. 32 No. 10, 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

PHASE I BOOK EXPLOITATION SOV/3891

Moscow. Nauchno-issledovatel'skiy institut vesov i priborov

Vesoizmeritel'nyye pribory i ispytatel'nyye mashiny; teoriya i raschet, [vyp. 1] (Load-Measuring Devices and Testing Machinery; Theory and Design, [no. 1]) Moscow, Mashgiz, 1959. 178 p. 3,600 copies printed.

Sponsoring Agency: RSFSR. Moskovskiy ekonomicheskiy rayon. Sovet narodnogo khozyaystva.

Ed.: N.A. Mironov, Engineer; Ed. of Publishing House: L.G. Prokof'yeva; Tech. Eds: Z.I. Chernova and V.D. El'kind; Managing Ed. for Literature on Machine and Instrument Construction (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: This collection of articles is intended for scientific workers and technical personnel specializing in weighing devices, instrument construction, and related fields. It may also be useful to students of schools of higher technical education.

Card 1/ 3

COVERAGE: This collection of articles contains results of theoretical and experimental investigations of weighing and testing machines. The investigations were conducted by the Nauchno-issledovatel'skiy institut vesov i priborov (Scientific Research Institute for Weights and Instruments). The articles deal with analysis of errors in dial-type automatically balanced indicators and methods for designing indicator elements, experimental investigaton of elastic imperfections in springs used for measuring forces, analysis of accuracy in dynamic-load measurement with high-frequency fatigue-testing machines, and the relation between the error of measurement of cyclic reversed loads and the degree of damping of oscillations of an elastic element. Also discussed are measurement of the accuracy of forces in a water tunnel and a method of checking indicators of hydraulically actuated fatigue-testing machines. References follow several of the articles.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

VL/pw/gmp
8-25-60

28(5) SOV/32-25-7-30/50

AUTHORS: Bol'shikh, A. S., Etkin, L. G.

TITLE: Method for the Determination of Elasticity Moduli of Materials at Temperatures up to 1200° (Metod opredeleniya moduley uprugosti materialov pri temperaturakh do 1200°)

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, pp 865-867 (USSR)

ABSTRACT: A method for the determination of the elasticity modulus (E) was worked out which is based on the frequency function of the transverse vibrations of the sample of (E), as well as of the displacement modul (G). A sample with rectangular section was used which had two different inertia moments with regard to two vertical axes. The arrangement scheme of the unit patented by Bol'shikh, A. S. and Etkin, L. G. (Patent Nr 114964 of December 27, 1957) is given (Fig 1). The description shows that the sample is put into a furnace on prisms of a ceramic traverse. The electrodes of the differential capacity donor are on the traverse. There were two kinds of sample vibrations: in the first case the capacity of one condenser decreased and that of the other condenser increased, in the second case the capacity of both donor halves changed simultaneously but with inverse value. The amplitude modulation of the vibrations

Card 1/2

Method for the Determination of Elasticity Moduli of Materials at Temperatures up to 1200°

is transferred on to an arrangement containing a phase transformer, amplifyers, filters for high frequencies and preliminary amplifyers. A precision instrument for measuring frequencies was designed (Fig 2) in order to measure the (E) and (G) values. A quartz generator with a thermostat, type 22-P, (part of the chronograph produced by the Leningradskiy zavod elektricheskikh chasov (Leningrad Factory of Electrical Clocks)) is used as time standard. The voltage of the generator is transferred to the frequency distributor over four decades of the type DP-2. An electron-stabilized rectifier, type ESV-1m, is used for feeding the testing apparatus described of the type MU. The apparatus MU was produced at the Opytnyy zavod NIKIMP (Experim. Plant NIKIMP). There are 2 figures and 1 Soviet reference.

ASSOCIATION: Nauchno-issledovatel'skiy i konstruktorskiy institut ispytatel'nykh mashin, priborov i sredstv izmereniya mass (Scientific Research and Construction Institute of Testing Machines, Testing Apparatus, and Means of Mass Determination)

28(4)
AUTHOR: Bol'shikh, A. S.

S/032/60/026/02/050/057
B010/B115

TITLE: A Dynamometer for a Torsion-testing Machine With Electromagnetic Singing

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol 26, Nr 2, pp 246-248 (USSR)

ABSTRACT: Fatigue tests can be performed at high load frequencies (some hundred or thousand cps) only when electric methods are applied to measure the deformations of the specimens. For this reason, a detailed analysis of the oscillation system of the torsion-testing machine is given in the present paper. From the calculation of the dynamic error of an oscillation system with a fixed moment of elasticity it results that the error does not exceed 1%, if the ratio q between the frequency at which the specimen is tested, and the partial frequency of the dynamometer does not exceed 0.1. It is most appropriate to calculate the construction of new testing devices from the following equation:

$$\Delta = \left[\frac{2}{2-(ab+a+1) \pm \sqrt{(ab+a+1) - 4ab}} \right] - 1 \cdot 100\%$$

(a = ratio between the rigidity of the specimen and the rigidi-

Card 1/2

A Dynamometer for a Torsion-testing Machine With Electromagnetic Singing

S/032/60/026/02/050/057
B010/B115

ty of the dynamometer, b = ratio between the moment of inertia of the holder on the dynamometer and the moment of inertia of the armature of the oscillator). An elastic dynamometer used for measurements with cyclic stress in a wide frequency range, i.e. with a varying torsional moment of up to 50 kgm with a maximum error in measurement of ± 3% was designed. The deformation of the dynamometer (which is proportional to the torsional moment applied) is measured with a differential induction transmitter. The core of the Ш-shaped transmitter is composed of foils made of NKhS-80 alloy. A diagram of the electronic block of the dynamometer is given (Fig 2) together with a corresponding description. There are 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy i konstruktorskiy institut ispytatel'nykh mashin, priborov i sredstv izmereniya mass (Scientific Research and Design Institute of Testing Machines, Devices, and Instruments for the Measurement of Mass)

Card 2/2

S/535/61/000/140/004/006
D240/D304

AUTHOR: Bol'shikh, A.S.

TITLE: Methods of measuring dynamical loads in self-oscillation machines for fatigue testing of specimens of materials and components of motors

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 140. Tekhnologicheskiye metody povysheniya kachestva detaley i uzlov aviadvigateley, 1961, 37-70

TEXT: The author gives first a detailed description of the methods in question on the basis of previous publications. Four possible schemes of vibrational systems of machines for testing the fatigue strength in bending are considered. (Fig. 2). The equations of motion of the systems are solved in order to find the dynamical errors. System v) is not considered as it is similar to b). The system g), used by the author in a machine for fatigue testing of turbine blades, has the special property that the specimen (blade) is loaded by inertial forces

Card 1/2

Methods of measuring ...

caused by displacement of the whole dynamometer. This leads to difficulties in measuring the bending moment acting in the root part of the blade. The author describes a special type of dynamometer with an arrangement allowing static calibration of the former. Formulae are derived for the rigidity coefficients of the elastic element of the system g) and a method for the numerical determination of the position of the mass center and the moment of inertia of the grip of the dynamometer is indicated. Results are quoted for a numerical example and the graph of dynamical errors is plotted with the aid of these. There are 11 figures, 2 tables and 18 references: 16 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: D.A. Drew, Engineering, 172, no. 4481, (1951); R.C.A. Thurston, ASTM Bulletin, no. 1954 (1948).

Card 2/3 2

BOL'SHIKH, A.S.; ETKIN, L.G.

Dynamic calibration of dynamometers. Izm. tekh. no. 3:9-11 Mr '61.
(MIRA 14:2)
(Dynamometer) (Calibration)

BOL'SHIKH, A. S.

Cand Tech Sci - (diss) "Measurement of variable loads in high-frequency machines for testing fatigue of samples of materials and parts of aviation engines." Moscow, 1961. 18 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Lenin Aviation Inst imeni S. Ordzhonikidze); 150 copies;price not given;bibliography at end of text (10 entries); (KL, 6-61 sup, 214)

BOL'SHIKH, A.S.

"Modern machines and devices for mechanical testing of materials" by B.A.Avdeev. Reviewed by A.S.Bol'shikh. Priborostroenie no.8: 3 of cover Ag '62. (MIRA 15:9)
(Testing machines) (Avdeev, B.A.)

S/119/62/000/008/002/004
D262/D308

AUTHOR: Bol'shikh, A.S., Candidate of Technical Sciences

TITLE: Dynamometer for a high frequency machine for blade testing

PERIODICAL: Priborostroyeniye, no. 8, 1962, 4 - 6

TEXT: The article describes the dynamometer used on machine MBI-4 (MVL-4) designed for fatigue testing of turbine and compressor blades. Basically the dynamometer consists of a clamp for blade fastening, elastic member, differential capacitive indicator consisting of one central earthed electrode and two side electrodes connected to the oscillating circuits of two generators, and recording device. Constructional details and design methods to obtain correct characteristics of the instrument are described. The problem of the dynamic errors of the instrument is discussed in detail, and methods for defining experimentally and analytically the error magnitude are presented. The mean error in this instrument does not exceed ± 2.5 % and is constant. There are 3 figures.

Card 1/1

L 14447-65

ACCESSION NR: AP4045923 S/0119/64/000/009/0030/0030

AUTHOR: Bol'shikh, A. S. (Candidate of technical sciences); Kotov, A. N. (Engineer)

TITLE: EDV-8 electrodynamic vibrator

SOURCE: Priborostroyeniye, no. 9, 1964, 30

TOPIC TAGS: vibrator, electrodynamic vibrator, EDV-8 vibrator, EDV-9 vibrator, EDV-10 vibrator, EDV-14 vibrator, EDRV-1 vibrator

ABSTRACT: The EDV-8 25—10,000-cps electrodynamic vibrator is intended for vibration tests of electronic-equipment components and devices, investigating physical characteristics of materials, determining resonance conditions in various objects, etc. Its input impedance is within 0.1—0.5 ohm for the 70—2,000-cps range. The vibrator can be turned ±90° about a horizontal axis; it develops a load force of 2.8 kg. Other data for this vibrator as well as

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L 11447-65
ACCESSION NR: AP4045923

for larger types (EDV-9, EDV-10, EDV-14, EDRV-1) is tabulated. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: NIKIMP

SUBMITTED: 00 ENCL: 00

SUB CODE: IE NO REF SOV: 000 OTHER: 000

Card 2/2

BOL'SHIKH, A.S.; KOTOV, A.N.

The EDV-8 electrodynamic oscillator. Priborostroenie no.9:30 S '64.
(MIRA 17:11)

ACC. NR: AP6025646 (A) SOURCE CODE: UR/0413/66/000/013/0098/0098

INVENTOR: Skrabelinskiy, N. V.; Kuptsova, N. I.; Kondrashova, Yu. D.; Fridlyand, V. I.; Bol'shikh, A. S.; Sergeyev, V. N.; Kokashinskaya, S. Z.

ORG: None

TITLE: A machine for fatigue testing parts or material specimens. Class 42, No. 183456 [announced by the Central Scientific Research Institute of Technology and Machine Building (Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 98

TOPIC TAGS: rotor blade, fatigue test, bend test, tensile test

ABSTRACT: This Author's Certificate introduces a machine for fatigue testing parts or material specimens under the simultaneous effect of bending and tension at high temperatures in special media. Blades to be tested are mounted on a rotating disc located in a test chamber and subjected to oscillatory motion generated by an exciter. The unit is designed to produce axial flexural oscillations of the disc, and also for excitation over a broad frequency range from a few dozen to several thousand cycles per second. Design of the machine is simplified by using an electrodynamic exciter made with a short-circuited rotating coil, a stationary pickup (e. g. a ca-

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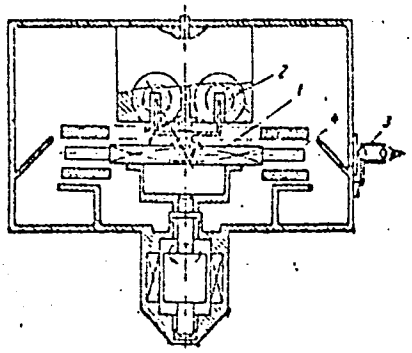
UDC: 620.178.325.2.002.52

ACC NR: AP6025646

pacitance pickup) and a microscope. The blades are mounted in sockets along the rim of the rotating disc at an angle to the plane of the disc. When the disc rotates, the blades are inclined through an additional angle corresponding to the amplitude of the oscillations generated in the disc.



1—rotating disc; 2—electrodynamic exciter; 3—microscope; 4—blades

SUB CODE: 13, 11/ SUBM DATE: 13Jan64

Card 2/2

Polshikh, S. F. "Shubar-Kudak and Keikebus: Results of Seismic Investigations Made in 1931-33." Biulleten Neftianoi Geofiziki, Moscow-Leningrad, vol. 2, 1936. pp. 39-52.

VOYUTSKIY, Vladimir Sergeyevich; DROZDOV, Aleksandr Aleksandrovich; BOL'SHIKH,S.F., redaktor; PETROVA,Ye.A., redaktor; POLOSINA,A.S., tekhnicheskiy redaktor

[Model SS-26-51D seismological station] Seriinaia seismostantsiia SS-26-51D Moskva, Gos.nauchno-tekhn.izd-vo neftianoi i gorno-toplivnoi lit-ry, 1955. 108 p. (MLRA 9:2)
(Seismometers)

15-57-5-6608

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5, p 156 (USSR)

AUTHOR: Bel'shikh, S. F.

TITLE: The Approximate Representation of an Odograph of Reflected Waves in Multi-Layered Sections (O priblizhennom predstavlenii godografa otrazhennykh voln v sluchaye mnogosloynoy pokryvayushchey sredy)

PERIODICAL: Prikl. geofizika, Nr 15, 1956, pp 3-13.

ABSTRACT: The equation for an odograph of reflected waves in the parameter form is of little use for practical purposes. The precise equation in the form $t = f(x)$, obtained by excluding the parameters from the parametric equation, is also unsuitable in practice because of its complexity. The author supplies an approximate equation in the form $t = f(x)$ by limiting the number of members in the series that represents the equation of the odograph. He has shown that only a small number of members of the series are required to obtain the necessary

Card 1/2

The Approximate Representation of an Odograph (Cont.)

precision. Examples of processing the odographs are given.
Card 2/2 A. F.

BOL'SHIKH, S.F.; DAVYDOVA, L.N.

Seismic logging of shot wells. Razved. i prom. geofiz. no.19:16-22 '57.
(Russian Platform--Seismic waves) (MIRA 10:11)

(4)

S/169/62/000/003/015/098
D228/D301 1/

3,9300

AUTHORS: Bol'shikh, S. F., Gorbatova, V. P. and Davydova, L. N.

TITLE: Study of the kinematic and the dynamic characteristics of reflected and leading waves on layered-medium models

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1962, 21, abstract 3A176 (V sb. Prikl. geofizika, no. 30, M., 1961, 25-49)

TEXT: The authors give the results of theoretical studies of the correlations of the kinematic and the dynamic characteristics of reflected and leading waves for two- and three-layer ideally-elastic media with different parameters. The results of theoretical calculations are compared with the data of experimental investigations, carried out for different durofluid models of media with parameters close to the calculated. The cited graphs illustrate the good coincidence of theoretical and experimental curves for the dependence of the amplitudes of individual waves and the ratio of the amplitudes of different waves on the distance. It is shown that, in

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S/169/62/000/003/015/098
D228/D301

Study of the kinematic ...

the case of waves reflected and refracted at the same boundary under conditions of a homogeneous incumbent medium, the intensity of the reflected wave exceeds by several times the intensity of the leading waves. An interference-free leading wave is observed with those reflected from the sole of the bed of the thickness of the refracting layer exceeds by several times the length of the wave. If the thickness of the refracting layer is comparable with, or less than, the length of the wave, a complex interference wave, formed by the superimposition of the wave reflected from the layer's base upon the leading wave, is then observed; the intensity of the reflected wave thereby appears to be comparable with that of the leading wave, although it is greater in many cases. 15 references. /Abstracter's note: Complete translation./

Card 2/2

S/604/61/000/042/001/001
D201/D301

3.9300

AUTHOR: Bol'shikh, S.F.

TITLE: Seismoscope УЗС-2-60 (UZS-2-60)

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki. Razvedochnaya i promyslovaya geofizika, no. 42, 1961, 3 - 18

TEXT: The instrument was developed at the Laboratory of Dynamics of Seismic Waves of the VNIIGeofiziki. The seismoscope consists of the following sections: Triggering pulse forming section; the horizontal sweep trigger dealy; horizontal sweep saw-tooth voltage generator circuit; phase-selective amplifying stage for brightening the forward trace; rectangular pulse forming circuit for the electronics switch control; time marker generator; externally triggered large amplitude short pulse generator for exciting the piezo electric transmitter; vertical deflection amplifier 31ЛО33 (Z1L 033) CRT. The triggering pulse forming section is based on a 50 c/s mains-synchronized blocking oscillator and controls the delay,

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Seismoscope УЗС-2-60 (UZS-2-60)

sweep and trigger. The delay time is controlled by RC switching within the range 100 to 2000 microseconds. It consists of a cathode and screen grid coupled phantastron. The first two sections of the seismoscope form a unit producing triggering pulses, both direct and delayed, of the same shape and amplitude. The saw-tooth triggered generator for horizontal sweep forms a capacitive feedback and screen coupled circuit using the pentagrid 6А2П (6A2P) valve. The sweep duration can be varied in steps between 100 and 2000 microseconds. In order that observations be made at increasing distances between the transmitter and receiver and full use retained of the CRT screen, the sweep is triggered with a calibrated delay. To suppress the back-stroke only the forward stroke of the sweep has a full brightness. This is obtained by the modulator which is cut-off during the back stroke and triggered into operation for the duration of the forward sweep. For simultaneous observation and photographing of two processes that of the wave signal and time markers - these two are periodically switched in, in strong synchronism with the sweep by a simple double triode 6Н3П (6N3P) electronic switch. The transmitter has three stages with 6Ж2П (6Zh2P), 6N3P and ГИ-30 (GI-30) tubes respectively. The shape and duration of the mecha-

Seismoscope УЗС-2-60 (UZS-2-60)

nical pulse produced by the piezo-electric crystal depends on the properties and geometry of the latter and on the properties of the medium in which it is placed. In the arrangement described the mechanical pulse is obtained from a rapid discharge of a capacitor, the time of which is determined by the duration of the pulse at the grid of GI-30. The transmitter is triggered 25 times per second, the wave process lasts for not more than 2000 μ sec., so that the interval between mechanical pulses is slightly less than 0.04 sec. The time mark generator has 3 stages, producing 20, 10 and 2 μ sec. markers. The CRT EHT supply is derived from mains. Practice has shown that the HF EHT supply as used in the УЗС-2 (UZS-2) seismoscope of the Kiyev factory is a source of interference with large amplifier gains (about 10^6). The pass-band of the vertical deflection amplifier depends on the dimensions of the model and on the transmitter. For reflected and incident waves in three-dimensional models of stratified media and using transmitters in the form of cubes, frequency response of the amplifier should be between 15 - 300 kc/s between the 3 db points. All frequencies below 15 kc/s should be heavily attenuated. The gain of a Y-amplifier is actually (1.0 -

Card 3/4

Seismoscope Y3C-2-60 (UZS-2-60)

2.0) x 10^6 and is limited by the background noise level. The linear portion of the gain is determined by the symmetrical output stage and since in all preceeding stages the input voltage is less than 0.5 V - the linearity in these stages presents no problem. The linear deflection at the CRT screen is limited by the linearity of the power output valves to an amplitude corresponding to 10 V p-p deflection only. The d.c. supplies required are + 300 V at 80 mA; - 120 V at 20 mA; + 400 V at 80 mA and 1000 V at 20 mA. There are 7 figures.

4

Card 4/4

BOL'SHIKH, S.F.

UZS-2-60 seismoscope. Razved. i prom. geofiz. no.42:3-18 '61. (MIRA 16:11)

BOL'SHINSKIY, A.M.; TRAYBICH, S.I.

Acute lymphocytic choriomeningitis [with summary in French]. Zhur. nevr. i psikh. 57 no.3:310-316 '57. (MLRA 10:6)

1. Klinika infektsionnykh bolezney Stalinskogo meditsinskogo instituta (dir. I.R.Drobinskiy) na baze Oblastnoy bol'nitsy imeni K.Ye.Voroshilova (glavnyy vrach M.I.Lyuteya)

(CHOROID, diseases,
choriomeningitis, acute lymphocytic (Rus))
(MENINGITIS,
same)

POLUEKTOV Ivan Antonovich; MELIKHETOV, Sergey Stepanovich; KOLOMIYETS, Aleksandr Andreyevich; BELISHKIN, Grigoriy Moiseyevich; SAPRONOV, Vitaliy Tikhonovich

[New technology of mine shaft sinking] Novaia tekhnologiia sooruzheniia shakhtnykh stvolov. Moskva, Nedra, 1969. 113 p. (MIRA 18:10)

POL'CHINSKIY, M.T., inzh.; CHEFLKANOV, V.M., inzh.

Opening a seam presenting a danger of sudden outbursts of coal and gas at the "Ignat'evskaia" Mine. Shakht.stroi. 7 no.5: 24-25 My '63. (MIRA 17:1)

1. SU No.6 tresta Donatskshakhtostroy.

DUDUCHAVA, A.M., inzh.; LYASHCHUK, A.T., inzh.; BOL'SHINSKIY, M.I., inzh.; POPOV, V.B., inzh.

Opening a coal seam with preliminary lowering of the gas pressure in it. Shakht. stroi. 9 no.3:23-24 Mr '65.

(MIRA 18:7)

1. SU No.6 tresta Donetskshakhtostroy.

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Using PML-5 rock loaders during the mining of inclined workings. Shakht. stroi. 7 no.12:25 D'63. (MIRA 17:5)

1. Stroitel'noye upravleniye No.6 tresta Donetskshakhtostroy.

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TITLE: The Development of a Highly Effective Synthesis Process From CO and H_2. (O razrabotke vysokoproizvoditel'nogo protsessa sinteza iz CO i H_2)

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ABSTRACT: The following three problems have to be solved for achieving a highly effective industrial synthesis process on a stationary iron Fe catalyst: (1) heat elimination has to be at a required level while maintaining the necessary temperature for the synthesis process; (2) stable heat conditions have to be maintained and (3) the reaction $2CO = CO_2 + C$ has to be surpressed, and the negative effect of carbon deposition reduced to a minimum. The influence of circulation on the rate of the synthesis reaction has to be evaluated (Ref.1). The authors used the formula proposed by Zeligman and Anderson (Ref.2) and derived further equations. They found that under industrial conditions (when the concentration of H_2 equals 40 to 60%, and the rate of conversion equals 60to60%) an increase in the coefficient of circulation leads to a decrease in the reaction rate which is inaepenaent of

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the magnitude of the rate constant and consequently, also of the chemical properties of the catalyst. This decrease in the active component can be compensated by increasing the flow of mass of CO+H_2 to the catalyst particle. An alternative way is to increase the reaction temperature which causes acceleration in the side reactions of methanisation and decomposition of CO. These assumptions were confirmed by experiments carried out on a pilot plant. The diameter of the reaction tube was 19, 21 and 25 mm. The height of the catalyst layer 4,000 mm; up to 2 litre of catalyst were used. Purified synthesis gas (CO : H_2 = 1 : 1.1 or CO : H_2 = 1 : 1.2), containing 15% of inert material, was used as starting material. Three different samples of catalysts were prepared for investigating the effect of circulation on the reaction rate when carrying out the process on catalysts having different macro-structures. The catalyst samples were preformed at pressures from 0 - 10,000 kg/cm^2 which caused changes in the density varying from 3.4 to 5.1 g/cm^3 and changes in the porosity between 57 to 36%. Results are given in a Graph

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on page 39. The rate of conversion of CO + H_2O increases on granulated catalysts (when the preforming pressure equals 0 kg/cm^2) with increasing circulation coefficient. An increase in the circulation coefficient, when using catalysts preformed at a pressure of 10,000 kg/cm^2, leads to a decrease in the rate of conversion of CO+ H_2O. At 5,000 kg/cm^2 pressure the rate of conversion is practically independent of the circulation coefficient. These phenomena are explained. Results obtained during the investigation of the dependence of the degree of conversion on the circulation coefficient, and also on kinetic characteristics confirm the possibility of compensating the decrease in the conversion by changing the macrostructure of the catalyst. The most effective catalyst was obtained when preforming was carried out at a pressure of 5,000 kg/cm^2. Under the given synthesis conditions (volume rate equals 1,000 hours^{-1}, circulation coefficient equals 2 and the degree of conversion of CO+H_2 equals 70 - 80%) the decomposition of CO proceeds at a relatively fast rate, and in this way it was possible to achieve 20 - 30 day runs. Experiments were also carried out on decreasing the heat separation

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and on intensifying the heat elimination by decreasing the volume rate or the conversion rate. Runs were carried out at 70% degree of conversion and volume rates of 1000 & 400 hrs^{-1}, and it was found that at the latter volume rate the heat separation was reduced to 60%, and the length of the run increased from 33 to 90 days. The heat elimination can be intensified at a given height of a catalyst layer and circulation coefficient by decreasing the diameter of the reaction tubes. Reaction tubes with a diameter of 25.21 and 19 mm were tested at a height of the catalyst layer of 4,000 mm, and a circulation coefficient of 2. The process can be carried out in tubes with an internal diameter of 19 mm. The following optimum conditions for this process are specified: volume rate 1,000 $hours^{-1}$, pressure 30 atms, circulation coefficient 2, temperature 310°C, a ratio of $CO:H_2$ in the synthesis gas of 1:1.2; diameter of the reaction tube 19 mm and degree of conversion of $CO + H_2$ 60%. Results of a 93-day run of the reactor, using an iron catalyst preformed at a pressure of 5,000 kg/cm^2, are given. Disadvantages of the

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process lie in the high yield of light products and the small diameter of the reaction tubes. It was also found that the yield of the middle fractions can be increased by using very active and selective catalysts and that larger diameter reaction tubes can be used when increasing the linear velocity of the gas. There are 1 Figure and 4 Soviet References.

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